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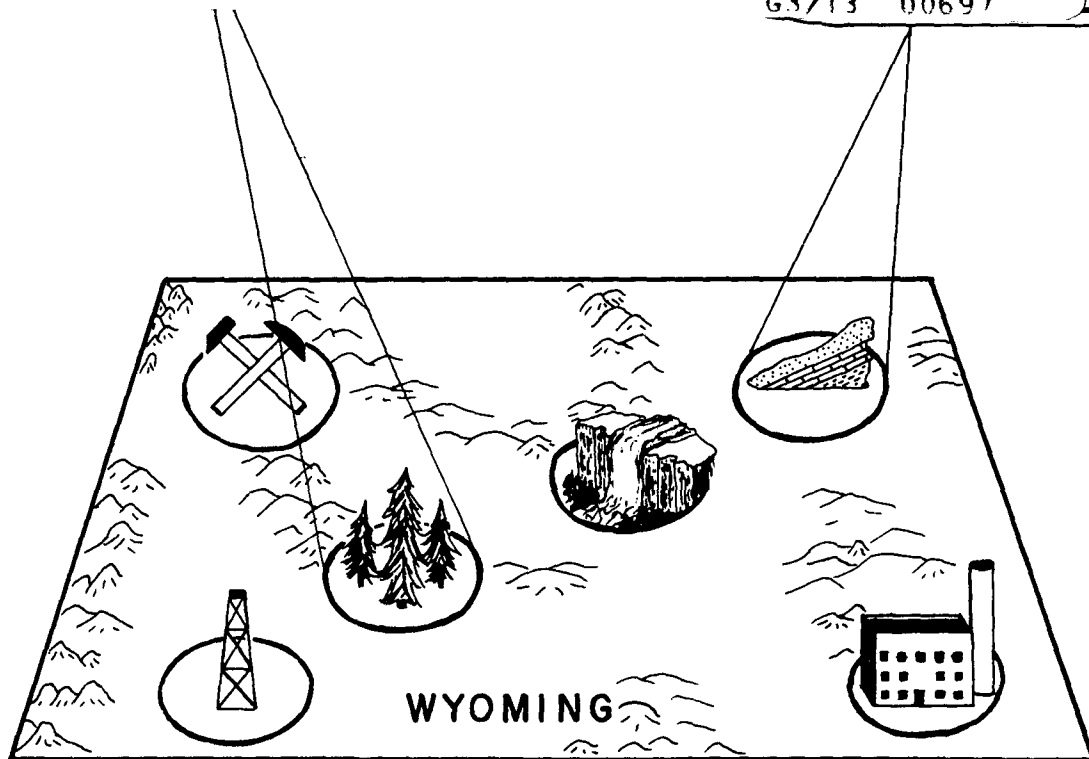
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16. Abstract May-June progress in the Wyoming EREP investigation has been largely limited to data acquisition and related activities. Ground calibration stations were manned for each of three EREP data passes. In each case, the necessary control data were obtained, but adverse cloud conditions spoiled most of the EREP data and caused high-altitude aircraft flights to be postponed. We are uncertain about how much, if any, useful data were obtained on these data passes. However, observations from manned ground sites at the time of Skylab overpasses indicate that some test areas were relatively cloud-free during the EREP data takes.				14. Sponsoring Agency Code	
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MULTIDISCIPLINARY STUDY OF WYOMING TEST SITES

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June, 1973

Progress Report for May-June, 1973

Prepared for

JOHNSON SPACECRAFT CENTER

HOUSTON, TEXAS 77058

WORK SUMMARY

Three EREP data passes across Wyoming were attempted during the Skylab II mission. Each of the three attempted passes was taken along a different Skylab ground track (tracks 5, 19, and 48). In each case, Wyoming investigators selected calibration sites along the candidate ground track and set up an equipment array to measure parameters that would serve as calibration for the EREP and aircraft sensors. In areas where the multiband camera facility (S-190A and S-190B) and the multispectral scanner (S-192) were prime sensors, the calibration parameters included:

1. Solar influx prior to and during data take.
2. Visible and near infrared reflectances of important rock units, soils, vegetative communities, and water bodies.
3. Radiometric temperatures and change rates.
4. Meteorological records (air temperature, humidity, wind direction and velocity, precipitation, and cloud cover).

In addition to the three calibration sites set up in support of the photographic and scanner passes, a fourth calibration site was equipped in anticipation of an infrared spectrometer/scanner data take along track 62. However, no EREP data were obtained on that track.

As we await the results of the Skylab II mission we are continuing with phase II of the Wyoming investigation by gathering reflectance data on important lithologies and vegetation communities in key test areas throughout the state. Essential equipment for the Wyoming EREP investigation is now available or in the final phases of construction. The Hasselblad multiband camera array is complete and ready to be used in low-level support flights. The field photometer systems have been redesigned and two new systems are being constructed.

PROBLEMS AND RECOMMENDATIONS

The major problem during the Skylab II mission has been the unseasonably wet weather with the attendant heavy cloud cover. However, we have also found the extremely short notice of EREP data passes very impractical with regard to obtaining adequate aircraft- and ground-calibration data. This is particularly true for spectrometer sites which require a large array of thermister probes to be emplaced and allowed to equilibrate before the data pass. This operation requires at least 48 hours' notice. Consequently, the field crew must set up the calibration array each time a candidate pass is selected over the spectrometer site.

It is similarly difficult to plan special ground truth activities related to aircraft overflights when the satellite pass is uncertain. Consequently, a considerable amount of manpower and material resources are wasted in abortive candidate data passes. We would much prefer a firm commitment to attempt an EREP data pass along a specific track on a specific day. This would avoid repeated situations wherein the ground crew has travelled several hundreds of miles and spent 1 or 2 days setting up equipment only to learn that a different track has been selected for the data pass.

SIGNIFICANT RESULTS

The only significant result to date has been the development of a re-designed field photometer system which allows faster and easier measurement of object reflectances. Preliminary tests indicate that the new system will be slightly more accurate than the old filter wheel system, in addition to being easier to operate, more rugged, more compact, and less expensive. Detailed specifications and performance characteristics of this new equipment will be reported after testing is complete.

SUMMARY OUTLOOK

In the coming investigative period we anticipate a limited amount of EREP data from the Skylab II mission. These data should allow many of the Wyoming investigators to begin their analyses. However, some investigative tasks will have to be delayed until suitable EREP coverage of central Wyoming and supporting aircraft data are obtained.

REFERENCES

- Breckenridge, R. M., and Marrs, R. W., 1973, Multidisciplinary study of Wyoming test sites--progress report for March-April, 1973; University of Wyoming, Department of Geology, Report EREP-1-73A, 3p.
- Marrs, R. W., 1973, Wyoming multidisciplinary EREP investigation--milestone plan; University of Wyoming, Department of Geology, Report EREP-MP-73B, 3p.